

STATEMENT OF PURPOSE

The purpose of this handbook is to provide better patient care through information helpful in the ordering, collecting, and interpreting of laboratory tests and in contacting laboratory personnel for assistance.

Comments and suggestions regarding the handbook are always welcome.

TABLE OF CONTENTS

	<u>Pages</u>
I. DEPARTMENT OF PATHOLOGY STAFF.....	4-7
II. LABORATORY MANAGERS / SUPERVISORS.....	8-9
III. LABORATORY INFORMATION SYSTEM – TEST RESULT REPORTS	10-11
IV. GENERAL INFORMATION.....	12-31
Requests for Tests.....	12
Unacceptable Specimens.....	13
Normal Range Studies.....	14
Phlebotomy.....	15-19
General Instructions / Policies	15-16
Order of Draw.....	17
Arterial Blood Collection.....	17-19
Sample Transport – Pneumatic.....	20
Urine Collection Instructions and Policies.....	21
Specimen Requirements for 24 hr Urine Preservatives	22
Interference with Tests/Special Diets.....	23-24
Specimen Rejection.....	25
Reduced Staff Emergency Procedures.....	26
Delays in Laboratory Testing.....	27
Compliance for Microbiology.....	28
Reference Laboratories.....	29
Critical Values.....	30
Drug Screen Detailed Info.....	31
V. CLINICAL PATHOLOGY LABORATORIES.....	32-54
Clinical Chemistry	32-34
Clinical Immunology	35
Coagulation	36-38
Hematology and Urinalysis.....	39-42
Microbiology.....	43-48
Molecular Genomic Pathology.....	47
School of Medical Technology.....	49

TABLE OF CONTENTS (Continued)

Transfusion Free Medicine and Surgery	50
Transfusion Service (Blood Bank).....	51-53
VI. ANATOMIC PATHOLOGY LABORATORIES.....	54-69
Autopsy Pathology.....	54-58
Cytology.....	59-61
Electron Microscopy.....	62
Histopathology.....	63-64
Immunohistochemistry.....	65-67
Surgical Pathology.....	68-69
VII. Test Listings.....	70-155

I. PATHOLOGY STAFF

Interim Pathologist-in-Chief – RIH/TMH	Li Juan Wang, M.D., Ph.D.	4-5011; 3-4245
Chairman – NH	Dariusz Stachurski, M.D.	5-1275
Clinical Pathology Director- RIH/TMH	James Barbeau, M.D., J.D.	3-7636
Director of Pathology - TMH	Li Juan Wang, M.D., Ph.D.	3-7733
Director, Pathology Admin. - RIH/TMH/NH	Marilyn McAllister, MBA, MT (ASCP), SBB	4-8516
Manager, Operations – RIH/TMH/NH	Steven Smeal, MS, MT (ASCP)	3-4202
Administrative Coordinator – RIH/TMH	Lissi Marte	6-4467
Pathology Business Manager – RIH/TMH	E. Jeffrey Ladner	4-4321

ANATOMIC PATHOLOGY:

Director of Pathology - TMH	Li Juan Wang, M.D, Ph.D.	Main Bldg. 2 TMH	3-7733
Chairman Pathology – NH	Dariusz Stachurski, M.D.	Hazard 3 NH	5-1275
Autopsy Co-Directors	Weibiao Cao, M.D.	APC-12 RIH	4-8578
	Katelyn Dannheim, MD	APC- 12	4-3847
Cytopathology Director	Latha Pisharodi, M.D.	APC-12 RIH	4-7826
Cytopathologist	Mariana Canepa, M.D.	APC-12 RIH	4-6356
Cytopathologist	Sara Maleki, M.D.	APC-12 RIH	4-5395
Histopathology Director	Maria Garcia-Moliner, M.D.	APC-12 RIH	4-4723
Immunohistochemistry	Jesse Hart, D.O.	APC-12 RIH	6-2082
Co-Directors	Sara Maleki, M.D.	APC-12 RIH	4-5395
Neuropathology Director	Ivana Delalle, M.D., Ph.D.	POB-322 RIH	6-4420
Neuropathologist	John Donahue, M.D.	POB 322 RIH	4-7968

Surgical Pathology Director - RIH

	Maria Garcia-Moliner, M.D.	APC-12 RIH	4-4723
Staff Pathologist	Ali Amin, M.D.	Main Bldg. 2 TMH	3-7813
Staff Pathologist	Douglas Anthony, M.D.	APC-12 RIH	4-5154
Staff Pathologist	Mark Birkenbach, M.D.	POB-342 RIH	6-4476
Staff Pathologist	Mariana Canepa, M.D.	APC-12 RIH	4-6356
Staff Pathologist	Weibiao Cao, M.D., MSc.	APC-12 RIH	4-8578
Staff Pathologist	Katelyn Dannheim, MD	APC-12 RIH	4-3847
Staff Pathologist	Christopher Elco, M.D., Ph.D.	POB 342 RIH	4-6127
Staff Pathologist	Lisa J. Goldstein, M.D.	Main Bldg. 2 TMH	3-4246
Staff Pathologist	Rogers C. Griffith, M.D.	Main Bldg. 2 TMH	3-4248
Staff Pathologist	Jesse Hart, D.O.	APC-12 RIH	6-2082
Staff Pathologist	Habibe Kurt, M. D.	Coro East 3201	4-1669
Staff Pathologist	Shaolei Lu, M.D.	APC-12 RIH	4-7120
Staff Pathologist	Donald MacDougall, M.D.	Hazard 3 NH	5-1284
Staff Pathologist	Sara Maleki, M.D.	APC-12 RIH	4-5395
Staff Pathologist	Dariusz Stachurski, M.D.	APC-12 RIH	3-4248
Staff Pathologist	Ross Taliano, M.D.	APC-12 RIH	4-2517
Staff Pathologist	Li Juan Wang, M.D., Ph.D.	Main Bldg. 2 TMH	3-7733
Staff Pathologist	Yihong Wang, M.D., Ph.D.	APC-12 RIH	4-9897
Staff Pathologist	Evgeny Yakirevich, M.D.	APC-12 RIH	4-2780

CLINICAL PATHOLOGY:

Division Director	James Barbeau, M.D., J.D.	APC-11 RIH	4-8252
Bioinformatics Director	Ece Uzun, Ph.D.	Coro East 304	3-8190
Clinical Chemistry/Special Chemistry/ Toxicology/Immunology			
Director of Clinical Chemistry	Ricky Grisson, M.D.	Main Bldg. 2 TMH	3-4212
Chemistry/Special Chemistry	Syed Latif, Ph.D.	POB 342	3-4272
Director of Toxicology	Adina Badea, Ph.D.	APC-11 RIH	4-8390
Director of Clinical Immunology	Shaolei Lu, M.D.	APC-12 RIH	4-7120
Molecular Genomic Pathology			
Director, Interim	Cynthia, L. Jackson, Ph.D.	Coro East 3201	4-4370
Scientific Director	Cynthia L. Jackson, Ph.D.	Coro East 3201	4-4370
Coagulation/ Transfusion Medicine			
Director	Joseph Sweeney, M.D.	Main Bldg. 2 TMH	3-4811
Transfusion Medicine	Jeffrey Bailey, M.D.	Main Bldg. 3 RIH	4-5161
Transfusion Medicine	Jonathan Kurtis, M.D.	Main Bldg. 3 RIH	4-5298
Hematopathology			
Director	Diana Treaba, M.D.	APC-11 RIH	4-8897
Spec. Hematology and Cell Marker			
Associate Scientific Director	Karen Ferreira, M.S., M.T. (ASCP)	APC-11 RIH	4-8342
Hematopathologist	Christopher Elco, M.D., Ph.D.	POB 342 RIH	4-6127
Hematopathologist	Katelyn Dannheim, MD	APC-12 RIH	4-3847
Hematopathologist	Habibe Kurt, M.D.	Coro East 3201	4-1669
Hematopathologist	Dariusz Stachurski, M.D.	POB 342 RIH	4-6296/5-1278

**Microbiology/Virology/
Micro Molecular**

Director	Tao Hong, Ph.D.	APC 11 RIH	4-3144
Associate Director	Sara Geffert, M.D.	APC 11 RIH	4-4421
Point of Care (POCT) Director	Ricky Grisson, M.D.	TMH Main 2	3-4298
Transfusion Free Medicine Director	Stephanie Lueckel, M.D.	POB 440 RIH	4-6461

II. LABORATORY MANAGERS / SUPERVISORS

Anatomic Pathology (Neuropathology, Electron Microscopy, Histology, Immunohistochemistry, Autopsy, Cytology)	Rony A. Lopez	APC-12 RIH	4-8523
Anatomic Pathology - Reports			
TMH/RIH	Lissi Marte	APC-12 RIH	6-4467
NH	Tara Barlow	Hazard 2 NH	5-1273
Central Collections – RIH	John Lasky	APC-11 RIH	4-6107
Central Collections – TMH	Amanda Silva	Main Bldg. 2 TMH	3-4216
Chemistry - RIH	Matthew Keane	APC-11 RIH	4-3702
Chemistry - TMH	Debra Napert	Main Bldg. 2 TMH	3-4661
Chemistry – NH	Kraig Ruth	Hazard 2 NH	5-1104
East Greenwich and Bristol Sites	Ean Larson	Main Bldg. 2 TMH	3-2526
Hematology/Urinalysis/Coagulation - RIH	Matthew Keane	APC-11 RIH	4-3702
Hematology/Urinalysis/Coagulation - TMH	Debra Napert	Main Bldg. 2 TMH	3-4661
Hematology/Urinalysis/Coagulation – NH	Kraig Ruth	Hazard 2 NH	5-1104
Immunology, Clinical	Carole Kavanagh	Main Bldg. 2 TMH	3-2711
Information Services, Laboratory	Gloria Wexler	West River	3-4260
Inpatient/Outpatient Phlebotomy - RIH	Judy Barroso	POB-1 RIH	4-8152
Inpatient Phlebotomy -TMH	Solange Mendez	Main Bldg. 2 TMH	3-3028
Inpatient/Outpatient Phlebotomy - NH	Kraig Ruth	Hazard 2 NH	5-1104
Microbiology/Virology	Valerie Whitehead	APC-11 RIH	4-8844
Molecular Genomic	Melissa Andrade	Coro East 3201	4-2469

II. LABORATORY MANAGERS / SUPERVISORS (continued)

Outreach			
General Manager	Judith Fleury	West River	3-4178
Manager, Pathology	Lori Berry	West River	3-4981
Outreach Services	Samantha Figueiredo	West River	3-4854
Outreach Services	Marc Fernandes	West River	3-4980
Outreach Services	Kris Kay	West River	3-3093
Outreach Services	Susan Manzi	West River	3-4252
Outreach Customer Support	Amy Rose	West River	3-4938
Pathologist Assistant, Lead	Robin Poudrier	Bridge Bldg. RIH 3	4-4602
Safety Officer – RIH/TMH	Ean Larson	Main Bldg. 2 TMH	3-2526
Safety Officer – NH	Tara Barlow	NH Hazard 3	5-1273
School of Medical Technology - RIH	Theresa Tellier-Castellone	POB 034 RIH	4-5724
Send Outs –RIH/TMH	Carole Kavanagh	APC-11 RIH	3-2711
Send Outs– NH	Kraig Ruth	Hazard 2 NH	5-1104
Toxicology	Matt Keane	APC-11 RIH	4-8390
Transfusion Medicine	Lisa Tingley	Main Bldg. 3 RIH	4-8673

CLINICAL LABORATORY CHARTING:

Clinical Laboratory Charting at the Hospitals is done by patient type (Inpatients, Outpatients, Emergency Room, and Clients).

- With the advent of the electronic medical records system, users are encouraged to review laboratory results on-line.
- Check LifeChart for completed results before calling the Laboratory.
- Issues with missing reports should be reported to the Lifespan Helpdesk.
- The performing laboratory is indicated on the patient report. If the performing laboratory is a location other than the patient location, the appropriate performing site is indicated on the report.

1. Inpatients:

All Inpatient results are available on-line in LifeChart. With LifeChart implementation, the only Soft Lab report generated is NRAD (New Results After Discharge) report. This report contains any test result after the patient has been discharged and is sent to the attending physician.

2. Emergency Room:

All Emergency Room patient results are available on-line in LifeChart. An ER Select Report will be generated for any patient seen in the ED who had certain lab work resulted in any of these areas - Thyroid function, Clinical Immunology, HIV serology, Microbiology and Bordetella. These ER Select reports are forwarded to the Quality Management department for review and are not to be placed in the patient's medical record.

3. Outpatients, Outreach and Clients:

All Outpatients, Outreach and Client patient results are available on-line in LifeChart. In addition, these patient types may generate a report with a pink column denoting any results that are out of range. Reports are referred to as Single Sheet reports and reflect the lab work on an individual order. There are four types of reports that could be produced - Partial, Final, Partial Amended and Final Amended. If all the lab work on a particular order number is completed, a Final report is generated. If results are outstanding, a Partial report is produced. Any tests that are still outstanding are noted in the report with the appropriate status, such as ordered, collected or in-lab, so that the physician is made aware of those tests not resulted. Each day if outstanding tests are resulted, a new partial is produced with all completed results displayed. When all the results are completed, a final report is produced containing all the results for that order number. If a test is "error corrected" prior to all results being final, a Partial Amended report is generated. Then, when all tests are completed, a Final Amended report is generated. Some locations/clients who have access to electronic results, have requested to have the hard-copy Soft lab report to be turned off.

4. Expedite Results:

Expedite reports are printed based on the patient's location as results are verified. During LifeChart downtime.

ANATOMIC PATHOLOGY CHARTING:

All Pathology results are available on-line in LifeChart after sign-out. Patient reports are also sent to the physician (s) associated with the case, according to their preferred reporting method. Please check LifeChart prior to calling Anatomic Pathology (TMH ext. 3-4245; RIH ext. 4-5160; NH ext 5-1273) for results. Upon request, reports are faxed to authorized physicians. If the physician would like to discuss the report with the pathologist, they may do so via telephone or visit the Pathology Department at TMH on MAIN-2 or at RIH on APC-12 or at Newport Hospital Hazard 3.

IV. GENERAL INFORMATION

REQUESTS FOR TESTS:

1. Most Clinical Pathology tests are ordered electronically. For departments/clients that do not use this method of ordering a Lab Requisition is used. Essential elements include: patient full name, date of birth, collection date, and if appropriate the collection time, source if applicable, clearly defined tests, diagnosis, and name and address of physician ordering on it. If electronic orders are not available such as during downtime, a LifeChart CSN is required on the requisition to ensure accurate uploading of test results to the electronic health record.
2. Requests for special coagulation studies: (i.e., any assay other than fibrinogen, PT and PTT) **must** include the following information: diagnosis, present clinical conditions of the patient, all medications (to include anticoagulants, heparin flush and blood component therapy). This information can be entered under Meds & Diag. in the IS. It is preferred that specimens not be drawn from any indwelling line that has a continuous flow of heparin or heparin flush. However, if access can only be obtained through an indwelling catheter, please see Table below. Coagulation assays will automatically be rejected when there is less than 4.5 ml of blood in the 4.5 ml blue top vacutainer tube or if the sample contains clots.

The Coagulation Laboratory will be glad to provide assistance in working up a prolonged PT and/or prolonged PTT.

Routine Coagulation Studies Without Heparin Therapy		Coags for a Patient on Heparin Therapy	
1st Choice -	venipuncture extremity should be free from any heparin solution, including an arterial line.	1st Choice -	venipuncture extremity should be free from any heparin solution including an arterial line.
2nd Choice -	arterial line - discard 5cc blood, then obtain 5cc blood for specimen.	2nd Choice -	arterial line - discard 5cc blood, then obtain 5cc blood for specimen.
3rd Choice -	pulmonary artery catheter or multi-lumen central line - discard 5cc blood then obtain 5 cc blood for specimen. IT MUST BE DOCUMENTED on computer that blood has been obtained from the above catheters.	*Samples may not be obtained from pulmonary artery catheters or multi-lumen central lines if patient is on HEPARIN THERAPY.	

Verbal orders for testing must be followed by a request for written documentation. The lab staff must read back the entire order to verify accuracy.

Specifically, the following specimens cannot be accepted:

UNACCEPTABLE SPECIMENS FOR LABORATORY TESTING:

1. Specimens not labeled or mislabeled. Mislabeled specimens include slip/specimen mislabeling and misdrawing - specimen in container is not from the patient whose name is on the label. Handwritten labels and slips must indicate the full name of the patient (last name, first name) and date of birth. Labels on specimens for Transfusion Service testing must also show the date collected. All other specimens must have the phlebotomist's initials.
2. Hemolyzed specimens are unacceptable for blood compatibility testing, Coagulation and Hematology testing. The Laboratory has validated individual chemistry assays for hemolysis interference. Test results may be reported on hemolyzed specimens if that test is validated to be unaffected by hemolysis. Test results affected by different degrees of hemolysis may still be reported but may include a footnote. Tests will be cancelled if degree of hemolysis exceeds the acceptable threshold of interference. The most common test orders that will be cancelled or footnoted for hemolysis interference include:

Ammonia	LDH
Bilirubin (Total and Direct)	Magnesium
CSF Protein	Phosphorus
Digoxin	Potassium
Ferritin	PSA
Folate, Serum	T3
Haptoglobin	T4
Iron	Uric Acid

3. **RIH** - Specimens for blood gas determinations cannot be accepted if a needle is still attached to the syringe or if the sample isn't received on ice. (Exceptions to the ice requirement are specimens from the OR, Cath Lab and EP Lab., or the patient is coding.)
TMH - Specimens for blood gas determinations cannot be accepted if a needle is still attached to the syringe.
NH – Specimen must be received within 30 minutes if not on ice. Syringe with attached needles will not be accepted.
4. Microbiology specimens for culture cannot be accepted when the source of the culture is not indicated. All specimens for culture must have the time of collection and ordering location

NORMAL RANGE STUDIES:

Whenever possible, Normal Ranges will be established / verified each time a new procedure is implemented. From that point on, they will be verified as needed to ensure there has not been a significant change. Additionally, they will be re-evaluated as the need arises. The population used may include any of the following:

Blood donor, pre-employment physicals, laboratory workers

PHLEBOTOMY:

General Instructions and Policies – Venipunctures, Using Vacutainers

1. Patient Identification is fully outlined in The Patient Identification & Verification Pathology Department Policy in the Pathology Administrative Manual, but some key points are:
Outpatient – Patients must present with a valid physician's script or have a standing order on file. They will be asked for insurance card and some form of positive identification and will be asked to confirm their name, and date of birth.
Inpatient - Whenever possible, the patient will be asked to state their name and date of birth, which will be checked against the Patient ID bracelet and the laboratory bar code labels.
2. Discrepancies:
Any discrepancies must be corrected prior to drawing the patient, which include the patient not having a Patient ID on or if any of the information is not consistent.
3. Phlebotomy Procedure – Hand hygiene protocol is followed before and after contact with patient's intact skin.
 - a. Select proper tubes for testing ordered as directed by the barcode labels generated. If labels are unavailable, this information is available in this Laboratory Guide.
 - b. Position the arm and apply tourniquet and instruct patient to clench fist. Be sure tourniquet is visible over patient's gown.
 - c. Palpate veins – blood is usually obtained from the anti-cubital veins of the forearm.
 - d. Put on powder free non-latex exam gloves.
 - e. Clean puncture site with 70% alcohol and allow to dry. Betadine should be used if Blood Alcohol is being collected (in the event of a second palpitation, the puncture site needs to be re-cleaned).
 - f. Place Eclipse needle in disposable vacutainer holder.
 - g. Hold the skin taut and insert needle with the bevel up.
 - h. Insert the tubes in the holder until all tubes are filled. Inverting each tube 8-10 times. For order of draw see following chart.
 - i. Release the latex free tourniquet and instruct the patient to open hand.
 - j. Apply gauze over the needle puncture and withdraw needle.
 - k. Engage the needle safety device.
 - l. Apply pressure to the site.
 - m. Dispose of needle and holder in an appropriate needle biohazard box. **Do not recap, bend or break needles after use.**
 - n. Bandage the arm and label tubes at the bedside, being sure to once again check the name on the label against the wristband or Lab. Requisition. The barcode labels should be placed as close to the top of the tube as possible, running lengthwise down the tube. The label should be straight and the patient's name should be read from the stopper side down. These labels must then be initialed by the individual who collected the sample and dated for Blood Bank testing.

- o. Samples should be placed in the appropriate biohazard labeled bags with all specimen requirements met (i.e. on ice, protect from light etc). These instructions can generally be found on the bar code label itself. An alternate site for this information is this Laboratory Guide.
 - p. Remove and discard gloves and wash hands.
4. If a butterfly collection set is used to obtain a Coagulation sample, a waste tube must be employed before collecting the tube which will be submitted for analysis. The waste tube should be discarded in a biohazardous waste receptacle.
5. Members of the Phlebotomy Team are NOT ALLOWED to draw from a patient in the following situations:
- a. Any individual collecting a blood sample may make only two attempts at doing so. If unsuccessful, they must contact their lead, supervisor, or the Nurse in charge of the patient and indicate that the patient is UTO. That individual may then attempt to collect the sample, or they must contact the ordering physician and explain the situation.
 - b. Blood will not be drawn from any inpatient that does not have a barcoded patient identification bracelet.
 - c. Phlebotomists will not draw blood from an IV or an arm into which IV solution is running. If no other vein is available, select a site that is:
 - **Below** the IV line by at least 3 inches. Do not use the same vein. Do not use an edematous area. (You can usually identify edema when you palpate the skin and your finger pressure leaves a slight indentation). The IV must be turned off for at least 2 minutes (this step must be done by a doctor or nurse).
 - Drawing above the IV is only done in extreme situations. If drawing above an IV site, the phlebotomist has the doctor or nurse turn off the IV for at least 2 minutes. Turning off the IV will allow the body's circulation to transport and mix the IV fluid with the blood. Dispose of the first few milliliters of blood, which may be diluted and contaminated with IV fluids.
 - d. Blood will not be drawn from a limb on which there is a pink alert band indicating a limb to be saved from venipuncture, unless specified in the chart by the physician.
 - e. The phlebotomist will not draw arterial blood.
6. Special Considerations
- a. All specimens are drawn using Standard Precautions.
 - b. When drawing a patient, the Phlebotomist must use non-latex gloves when collecting samples. Powdered latex gloves are prohibited.
 - c. A phlebotomist is prohibited from mixing blood from one tube to another as each tube has an additive that may interfere with the testing.
 - d. When drawing Inpatients, follow any special precautions that are posted on the patient's door. Hand carried phlebotomy trays must never enter the room if the patient has isolation precautions. The tray must be left in a secured place.
 - e. If the patient has a medical emergency while the phlebotomist is in the room, they should activate the Emergency Call button which is found on either the bed itself or in the bathroom. They should remain with the patient until a nurse responds to the light.

Order of Draw

1. Purpose:

The following order of draw is recommended when drawing several specimens during a single venipuncture. Its purpose is to avoid possible test result error due to the cross contamination from tube additives. Immediately after being drawn, each tube is mixed by inverting 8 to 10 times.

Order of Draw

Blood culture bottles (aerobic then anaerobic)

Serum tube for Heparin Induced Thrombocytopenia (white tube black ring)

Coagulation tube – blue (citrate)

Serum tube with or without clot activator, with or without gel (red top with yellow ring, red top with black ring)

Heparin tube with or without gel plasma separator (green with yellow ring, green with black ring, royal blue with black ring)

EDTA – lavender, pink and pearl

Oxalate/fluoride – gray

Note: When using a winged blood collection set for venipuncture and a coagulation tube is the first tube needed, first draw a discard tube. The discard tube must be used to prime the tubing of the collection set, which will assure maintenance of the proper anticoagulant/blood ratio in the first tube filled. The discard tube should be a nonadditive or a coagulation tube and need not be completely filled.

Arterial Blood Collection Procedure

1. Allen's Test – Procedure

NOTE: The Allen's Test must **ALWAYS** be performed prior to the first radial puncture. **NO EXCEPTIONS.**

- a. Have the patient extend the arm you would prefer to use to draw the blood sample. The palm should be face up.
- b. Squeeze one side of the patient's wrist with your thumb and forefingers to occlude the radial blood flow. Use your other hand in the same way to occlude the ulnar blood flow.
- c. Have the patient make a fist and squeeze tightly for a couple of seconds.
- d. The hand should now be opened to reveal the palm. It should appear blanched. Release pressure from the ULNAR artery. If there is good circulation through the ulnar, you should notice a rapid return of color to the palm. If the color does not return within 5 to 10 seconds, the radial artery in that wrist should not be used. Another puncture site should be found, preferably the other radial artery. Remember to perform the Allen's Test on that wrist also.

2. Prior To Collection

- a. Review the patient's chart.
- b. Verify the physician's order for the procedure.

- c. Check the patient's diagnosis and status.
 - Does the patient have a clotting problem?
 - Does the patient have peripheral vascular disease?
 - d. Check to see what medications the patient is on especially anticoagulants or aspirin.
 - e. Check the current oxygen therapy.
 - f. Check laboratory studies where applicable.
 - Partial thromboplastin time (PTT) N = < 35 seconds
 - Prothrombin Time (PT) N = < 15 seconds
 - Previous arterial blood gases.
 - g. Notify the patient's nurse that you are about to perform an arterial puncture. Ask the nurse to assist you if necessary.
 - Verify patient identification** per protocol
 - h. DO NOT puncture a patient's arm if they have a red band on that arm.
3. Gather the equipment needed.
- a. An ABG kit
 - b. An alcohol prep
 - c. A 2" x 2" gauze
 - d. A plastic bag filled with ice to send sample to lab
 - e. Latex or latex free exam gloves
4. Arterial Puncture Sites
- a. Radial Artery Puncture
 - Extend the wrist as for insertion of an arterial line; the site of puncture should be 1/2 to 1 inch (1.3 to 2.5 cm) proximal to the wrist crease.
 - Note: Allen's Test must be done once prior to performing the first arterial stick to check collateral circulation. Document Allen's Test in Doctor's Progress Notes.*
 - b. Femoral Artery Puncture
 - The patient should be supine with the legs straight; the puncture should be made distal to the inguinal ligament at the level of the inguinal crease
5. Procedure for Arterial Puncture
- a. Wear gloves.
 - b. Cleanse the skin with povidone-iodine or alcohol.
 - c. Palpate the artery selected. It is usually best to place two or three fingers along the course of the artery, both to locate its position and direction and to immobilize it.

- d. Depress the plunger of the syringe to expel all air. Then withdraw the plunger to at least the 2 ml mark to set the “aspirator”.
- e. Insert the needle for radial artery puncture (Fig. 1) and direct it slowly toward the pulsation. For femoral artery puncture (Fig. 2), insert the needle at a 90-degree angle. Occasionally penetration into the artery can be sensed, but usually puncture is detected by blood slowly entering the syringe as a result of arterial pressure (gentle aspiration may be required). If blood is not obtained during insertion, slowly withdraw the needle and stop once blood appears. If no blood appears, withdraw the needle altogether, and start again.
- f. Obtain 2 to 3 ml of blood (minimum 1 ml) and remove the needle from the artery while applying pressure to the site.
- g. Pressure should be maintained at the puncture site for at least 5 minutes or longer if the patient has a coagulopathy or is hypertensive.
- h. While maintaining pressure on the puncture site, expel any air bubbles from the syringe, **remove the needle** and apply the cap, provided in the ABG kit, to the end of the syringe.
- i. Immediately agitate the syringe 20-30 seconds to mix blood with heparin and guarantee anticoagulation.
- j. Label the sample syringe with patient's name, ID. number, and room number
- k. Place the syringe in ice if analysis will be delayed more than 10 minutes and transport it immediately to the laboratory.

Complications

The major complication of arterial puncture is a hematoma. This generally can be prevented or minimized by using a 23 gauge needle and applying pressure for at least 5-10 minutes after the puncture has been completed. The most serious complication is laceration of the artery. Thrombosis of the artery may occur after repeated punctures. Infection is a possible but uncommon complication. Injury to an adjacent nerve may occur with attempts at puncturing the femoral or brachial arteries.

Conditions for Patient Preparation

No specific preparations are required. Blood gas measurements may be done at any time for emergency conditions. Following ventilator or FIO₂ changes, measure should be made after 15-30 minutes.

SAMPLE TRANSPORT VIA THE PNEUMATIC TUBE:

1. All samples sent via the pneumatic tube must be sealed in the plastic Biohazard Specimen Bags specifically designated for use in the pneumatic tube.
2. Samples on different patients may be sent in the same bag.
3. If a laboratory requisition slip is being sent at the same time, the slip should be placed in the outer pocket of the specimen bag.
4. Samples requiring ice must be double bagged, with the sample being sealed in a bag and then placed into a second bag with ice and resealed.
5. All urine containers sent via the tube must have screw top lids and then sealed in the plastic transport bags. Urine containers with snap lids are prohibited. PLEASE ENSURE THAT LIDS ARE TIGHTLY SEALED.
6. Two Blood culture bottles may be sent at the same time in the special blue pneumatic tube labeled for blood culture bottles (double sponge insert with Velcro strap). Each bottle must be in a separate sealed biohazard bag.
7. CSF samples may be sent via the pneumatic tube. PLEASE ENSURE THAT CAPS ARE FASTENED.
8. Surgical specimens may not be sent to the lab via the pneumatic tube. They must continue to be transported by manual means.
9. Absolutely no food or other such materials should be sent via the pneumatic tube.
10. Finally, nothing should protrude from the carriers once closed. This will cause the carrier to jam in the tube system and will cause the pneumatic tube to be placed out of service until the jammed tube can be dislodged.
11. If a spill were to occur in the pneumatic tube, immediately notify:
 - a. RIH - x48030 Weekdays and x48020 on weekends and Nights.
 - b. TMH - Biomedical Engineering x32340 or call the Operator and have Biomedical Engineering paged.
 - c. NH - Call the operator at x66400 and have Biomedical Engineering paged.
12. All samples sent to the lab via transport must be placed in a biohazard specimen bag and then carried in a specimen transport bucket.

URINE SPECIMEN COLLECTION - GENERAL INSTRUCTIONS AND POLICIES:

Collection of Clean Voided (Midstream)

1. Purpose:

The “clean catch” or clean voided midstream specimen is the method of choice for routine urinalysis as well as for bacteriologic examination. For infants and children not toilet trained, a sterilized apparatus is used to collect the urine. Prior to collection, the external genitalia are thoroughly cleaned with a mild antiseptic solution if a bacteriologic examination is ordered. The midstream collection, without prior cleansing provides a satisfactory sample for routine urine collection.

2. Procedure:

- a. The patient is given a sterile urine specimen container and a cleansing towelette. For the collection of sterile urine specimen on infants and children who have not been toilet trained, a sterilized collection apparatus is placed on the child after the area is cleaned. This specimen can be collected at home and returned to the lab.
- b. The patient or parent/guardian is instructed to clean the area adjacent to the urethral meatus with the towelette.
- c. The patient is then instructed to discard the initial stream of voided urine. The midstream portion is collected into the sterile container and transferred to a yellow top vacutainer tube for routine exam.
- d. The container should be labeled with a bar code label, if possible. If not possible, the container must be labeled with the patient's first and last name and date of birth.
- e. Specimens should be transported to the testing laboratory as soon as possible but within 2 hours if kept at room temperature, within 4 hours, if refrigerated. Specimens for bacteriologic examination are stable for 24 hours, if refrigerated.

Collection of 24-hour Urine Specimen

1. Purpose:

Some lab testing for special biochemical analytes, metals or hormones is performed on urine specimens collected over a 24-hour period. The patient may also need to follow a specific diet before starting the collection. Refer to the Laboratory Guide under the specific analytes and the following chart. Patients must be given instructions as to how to collect a 24-hour urine and informed of any preservative used and the appropriate precautions for that preservative. 24-hour urine containers are labeled with the preservative information, if applicable.

2. Procedure:

- a. The patient is given a 24 hour urine collection container and a urine collection “hat”. If the container contains a preservative, the patient is informed of the contents and if it is an acid preservative, the patient is advised to its potential dangers. The container must be labeled with the preservative information.
- b. Collect all urine in the “hat”. Discard the first morning specimen.
- c. Collect all urines (after the first) that day and night into the “hat” and pour into the large urine container. The urine container remains refrigerated throughout the collection period.
- d. Collect the first morning specimen the next day. This ends the 24 hr collection.
- e. If in the Outreach setting, the patient should bring the sample to the laboratory that same day.

SPECIMEN REQUIREMENTS FOR 24 HOUR URINE PRESERVATIVES:

* Creatinine, Calcium, and Magnesium determinations may also be performed on these samples.

**Creatinine may be performed also.

All 24 Hour Urines Should be Refrigerated		
Refrigeration Only	Refrigeration Only	
Amino Acid	VMA	Special Diet Recommended
Amylase	Zinc	
Arsenic	5-HIAA	Special Diet Recommended
Calcium	17-Hydroxy Steroids	
Chloride		
Copper	*Refrigeration & 25 mL of 6N HCl Added	
Cortisol, Free	Catecholamines, Fractionated	Special Diet Recommended
Creatinine	Citrate (No preservative if part of Stone Risk)	
Creatinine Clearance	Delta Amino Levulinic Acid (ALA)	
Glucose	Metanepherines, Fractionated	Special Diet Recommended
Homovanillic Acid	Oxalate (No preservative if part of Stone Risk)	
Hydroxyproline	17-Ketosteroids	
Lead		
Magnesium	Refrigeration + 10 mL of 6N HCl	
Microalbumin	Histamine	
Nitrogen		
Osmolality	Refrigeration + 10 gm of Boric Acid	
Phosphorus	Aldosterone	
Potassium		
Porphyrins	Refrigeration & 10 mL of 10% Nitric Acid	
Pregnanediol	Mercury	
Protein, Total		
Selenium	Acid Washed Container	No Preservative
Sodium	Cadmium	
Urea Nitrogen	Iron	
Uric Acid	Thallium	

Note: Reduce the amount of preservative for children or anyone with a low (<500 mL) 24 HR output, i.e. 3-5 mL 6N HCl.

INTERFERENCES WITH TESTS/SPECIAL DIETS - (gathered from various sources – see below)

1. CATECHOLAMINES PLASMA: (Fractionated: Epinephrines, Norepinephrines & Dopamines)

Diet (48 hrs. prior): Patient should be instructed not to drink coffee, caffeinated beverages or smoke for 24-hrs prior.

Drugs: Unless for TDM monitoring, discontinue any epinephrine, norepinephrine or dopamine injections/infusions for at least 12-hrs before collection.

Drugs that affect physiological drug concentrations should be discontinued (48hrs.-1 wk). These include:

(increase) – ajmaline, aminophylline, chlorpromazine, clonidine, cyclopropane, diazoxide, either isoproterenol, MAO inhibitors, methyl dopa, nitroglycerin, perphenazine, phenothiazine, phentolamine, promethazine.

(decrease) – captopril, reserpine

(analytical interference) – aspirin, anileridine, disulfiram, guaifenesin, hydroxymandelic acid, methocarbamol, methyl dopa, oxytetracycline, phenazopyridine, phenolsulfonphthalein, stibophen.

Recommended Collection Procedure:

Plasma catecholamine levels can vary two –to-three-fold when the patient goes from a supine to a standing position.

- Calm the patient by giving complete instructions and reassurance regarding the procedure.
- Insert an intravenous catheter or needle into a forearm vein and attach a heparin lock to it.
- Allow the patient to lie quietly for 30 minutes.
- Draw blood into a green-topped (heparinized) Vacutainer tube through the heparin lock.
- Place the filled phlebotomy tube **in ice.**
- Transport immediately** to the chemistry laboratory.
- Specimen should be **centrifuged within 30 minutes of collection; immediately** remove and freeze plasma.

2. CATECHOLAMINES URINE: (24 hour collection with 25 mL 6N HCL)

Diet (48 hrs prior): Patients should be instructed not to drink coffee, caffeinated beverages or smoke for 24 hrs. prior.

Drugs: Unless for TDM monitoring, discontinue any epinephrine, norepinephrine or dopamine injections/infusion for at least 12 hrs. before collection.

(increase) – atenolol, dopamine, isoproterenol, nifedipine, nitroglycerine, prochlorperazine, rauwolfia, reserpine, syrosingopine, tetracycline, theophylline.

(decrease) – clonidine, decaborane, guanethidine, guanfacine, methyl dopa, ouabain, radiographic agents, reserpine, tosylate bretylium.

(analytical interferences) – aspirin, anileridine, disulfiram, guaifenesin, hydroxymandelic acid, methocarbamol, methyl dopa, oxytetracycline, phenazopyridine, phenolsulfonphthalein, stibophen

3. METANEPHRINES: (24 hr. collection with 25 mL 6N HCL)
Drugs (48 hrs prior): Drugs that affect physiological drug concentrations should be discontinued (48 hrs-1 wk). These include:
(Increase) – tricyclic antidepressants, labetalol, sotalol, hydrazine derivatives, MAO inhibitors, prochlorperazine.
(decrease) – fluvoxamine, levodopa
(analytical interference) – diatrizoic acid, acetaminophen, labetalol, methyldopa, oxprenolol, oxytetracycline, phenylephrine, chlorpromazine, imipramine, ephedrine, epinephrine, IVP drugs, most psychoactive agents.
4. VMA (Vanillylmandelic Acid, Urine): (24 hr. collection with 25 mL of 6N HCL)
Diet (48 hrs prior): No chocolate or foods containing chocolate, coffee, bananas, vanilla or food containing vanilla, citrus fruits fruit juices (1) alcohol, asparagus, avocados, caffeine (in anything) casein milk, cheese, chipped beef, dried cod, dried eggs, eggplant, jellies and Jell-O products, lactalbumin milk, NutraSweet, nuts of any kind, oranges, pineapples, raisins, tea, tomatoes or tomato products.
Drugs: No aspirin, acetaminophen, antitensive agents (α -methyl dopa)
 Drugs that effect physiological drug concentrations should be discontinued (48 hrs-1 wk). These include:
(increase) – ajmaline, chlorpromazine, glucagons, guanethidine, insulin, isoproterenol, levarterenol, lithium, methyldopa, nitroglycerin, prochlorperazine, rauwolfia, reserpine, syrosingopine.
(decrease) – brofaromine, clonidine, debrisoquin, disulfiram, fluvoxamine, guanethidine, guanfacine, hydrazine derivatives, imipramine, isocarboxazid, levodopa, MAO inhibitors, methyldopa, morphine, nialamide, phenelzine, phenothiazine, radiographic agents, reserpine.
(analytical interference) – aspirin, anileridine, disulfiram, guaifenesin, hydroxymandelic acid, methocarbamol, methyldopa, nalidixic acid, oxytetracycline, phenazopyridine, phenolsulfonphthalein, stibophen.
5. 5-HIAA (5-Hydroxyindolacetic Acid, Urine): (24-hr. collection with 25 mL 6N HCL)
Diet (48 hrs. prior): Patient should not eat avocados, bananas, cantaloupe, dates, eggplant, grapefruit, hickory nuts, honeydew, kiwi, pineapples, plantain, plums, tomatoes, or walnuts for a 48 hrs. prior to start of collection.
Drugs: Drugs that effect physiological drug concentrations should be discontinued (48 hrs-1 wk). These include:
(increase) – cisplatin, fluouracil, melphalan, methamphetamine, phenmetrazine, rauwolfia, reserpine.
(decrease) – chlor phenylalanine, corticotrophin, guanfacine, hydrazine derivatives, imipramine, isocarboxazid, isoniazid, levodopa, MAO inhibitors, methyldopa, moclobemide, octreotide, streptozocin.

Sources;

1. *Tietz textbook of Clinical Chemistry, Bruits & Atwood*
2. *Clinical Chemistry, Kaplan & Peace*
3. *Effects of drugs on Clinical Laboratory tests, Young*
4. *Endocrine patient's instructions.*

SPECIMEN REJECTION:

Purpose:

To assure the highest quality of patient care, the Department of Pathology has developed guidelines that must be strictly followed when submitting specimens for testing. Please refer to Pathology Administrative Procedures 1.4A and 1.6 for additional details regarding patient identification and labeling of samples.

The Laboratory will not accept specimens:

- a. When the specimen container is not labeled with the required information or when the patient's name on the container and requisition form do not correspond.
- b. When the type of specimen submitted is inappropriate to the test requested (see Laboratory Guide).
- c. When collection method or specimen container is inappropriate for the particular specimen submitted (See Lab. Guide).
- d. If the phlebotomist's initials are not on the specimen tubes.

Laboratory Responses When Non-Conforming Specimens are Received

For Criterion a. Specimen Identity

Laboratory personnel will:

1. Specimens that can be Recollected - (includes pap smears)

- Notify the ordering person or unit that the specimen has been rejected. Cancel the existing order and ask that the test be reordered and a properly identified specimen be submitted to the Laboratory. Document this call. Complete a specimen Identification Incident Report and submit to the Laboratory Manager.

2. Unique Specimen (tissue, CSF, bone marrow, body fluids, urine sample obtained by catheterization, sample affected by the start of a therapy (antibiotics) or parts of timed series of specimens)

- Request that the ordering person or unit send the person who can identify the specimen, to the Laboratory to identify the specimen and provide any other missing information.
- Request that the identifying person sign a statement (Confirmation of Specimen Identification) accepting full responsibility for the identification of the specimen and any resulting liabilities.
- Complete a Specimen Identification Incident Reporting Form and provide copies to the Laboratory Manager.

For Criteria b, c and d

Laboratory personnel will: Notify the ordering person or unit that the specimen has been rejected and specify the reason. Cancel the existing order and ask that the test be reordered and that an appropriate specimen be submitted to the Lab. Document call.

REDUCED STAFF EMERGENCY PROCEDURES:

When the disaster is such that the laboratory staff may be unable to reach the hospital, i.e. natural disaster, the laboratories will perform only those tests listed on the Reduced Staff Emergency Procedures list. It is expected that the need to limit laboratory testing would be on a temporary basis (24-48 hours). Any testing required and not listed may be requested by calling the Medical Director of the department involved.

<u>CHEMISTRY</u>		
Acetaminophen	Cerebrospinal Fluid Glucose & Protein	Phenobarbital
Albumin	Creatinine	Phosphorous
Alcohol	Dilantin	Quantitative HCG
Alkaline Phosphatase	Digoxin	Salicylate
ALT	Drug Screen	Tegretol
AST	Electrolytes	Theophylline
Ammonia	Glucose	Total Protein
Amylase	Lactic Acid	Troponin
Arterial Blood Gases	Lithium	Urea Nitrogen
T. Bilirubin	Magnesium	Valproic Acid
Calcium	Methemoglobin	Vancomycin
Carboxyhemoglobin	Osmolality	
<u>HEMATOLOGY</u>	<u>MICROBIOLOGY</u>	<u>COAGULATION</u>
CSF - cell count and differential	Culture and Gram Stain	APTT
CBC	Rapid Molecular Testing	Prothrombin Time/INR
Pregnancy Test	<u>BLOOD BANK</u>	<u>CLINICAL IMMUNOLOGY</u>
Urinalysis - STATs	Typing-Crossmatch/Screen – actively bleeding/urgent patients only	HIV

DELAYS IN LABORATORY TESTING:

If tests are unreasonably delayed beyond the published turnaround times, due to instrument/computer downtime or because it is necessary to transport them to another Institution, individual areas or physicians will be contacted with that delay.

Delays should also be reported at the earliest Patient Safety Huddle.

COMPLIANCE:

1. Microbiology culture identification and susceptibilities: It is expected that the laboratory will identify organisms and perform sensitivities if potential pathogens are found in an ordered culture. These reflex tests are billed when they are performed.
2. Stains/Smear Requests: Stain reports of all types are billed separately from culture.

REFERENCE LABORATORIES:

The majority of tests requested that are not performed on site at Rhode Island Hospital, The Miriam Hospital, or Newport Hospital lab are sent to ARUP(see Lab. Guide for specific tests and associated reference lab.). Address of reference lab is available upon request by the test requester by calling Customer Service at 793-4242. When specifically requested by a physician, a test may be sent to another reference lab. that holds a current Rhode Island State License. All reference labs. utilized must have a current CLIA certificate on file with Lifespan Pathology Laboratories. The lab will handle transportation of any specimen to be sent to another testing center. Please follow instructions for the particular test requested in the Alphabetical Listing for clinical tests and procedures beginning on *page 60*.

Selection Process for Reference Laboratories - Vendors are selected based on demonstrated service quality and/or past positive interaction with Lifespan. A document describing the selection process is on file in the Department. However, the following selection criterion are utilized:

1. Ability to perform the majority of procedures requested
2. Pricing based on volume of send outs
3. Interface with Laboratory Computer System
4. Regional experience
5. Past Lifespan experience with vendors

COMMUNICATION OF CRITICAL VALUES:

Critical test results are any values/interpretations where delays in reporting may result in serious outcomes for patients. The laboratory in conjunction with the hospital medical staff has defined what test results require timely communication and who the results should be reported to. An algorithm has been established to promote successful communication of critical test results. Please refer to Pathology Administrative Procedure 1.8 for more detailed information. The tests are categorized as red (immediate clinical action required within 60 minutes), orange (clinical action in 6-8 hours), and yellow (clinical notification in 1-3 days).

In general:

1. For inpatients: The result **MUST** be called to the requesting location and reported to the nurse caring for the patient. For outpatients: The result should be called to the requesting location and using the clinic matrix. For outreach, results are called to the ordering physician's office. When reporting the critical result, both the full name and date of birth of the patient, must be given and read back to ensure accuracy. The person receiving the critical result must "read back" the test result and this read back will be documented.
2. A **CHARTABLE FOOTNOTE** noting that a Critical was called and results "read back" must be entered into the LIS.

DRUG SCREENS:

LIS ORDERABLE TEST	Drug of Abuse Screen (Urine Required)	Drug Screen Comprehensive (Urine + Blood Required)
A. Quantitative Serum		
Ethanol		Y
Volatiles (EtOH, MeOH, Isopropanol, acetone)		Y
Acetaminophen		Y
Salicylate		Y
B. Qualitative Urine Spot Tests		
Urine Salicylate Screen		Y
Urine Imip-/Desipramine Screen		Y
Urine Phenothiazine Screen		Y
Urine Placidyl Screen		Y
C. Qualitative Urine DAU Immunoassays		
Amphetamines (positive cutoff 1000ng/mL)	Y	Y
Barbiturates (positive cutoff 200 ng/mL)	Y	
Benzodiazepines (pos. cutoff 200 ng/mL)	Y	Y
Cocaine Metabolites (pos. cutoff 300 ng/mL)	Y	Y
Methadone (positive cutoff 300 ng/mL)	Y	
Fentanyl (positive cut off 2 ng/ml)	Y	
Opiates (positive cutoff 300 ng/mL)	Y	Y
Phencyclidine (PCP) (pos. cutoff 25 ng/mL)	Y	
Cannabinoids (THC) (pos. cutoff 50 ng/mL)	Y	Y
Oxycodone (positive cutoff 100 ng/ml)		Y
D. Gas Chromatography/ Mass Spectrometry Screening		Y
E. Confirmatory Testing on Positive Drug of Abuse Immunoassays (Automatic)		Y
Confirmatory Testing on Positive Drug of Abuse Immunoassays	Y	
<i>(by separate physician's request)</i>		
F. Quantitation Serum Assays on drugs detected (if possible in-house)		Y

V. CLINICAL PATHOLOGY

CHEMISTRY LABORATORY - RIH

Medical Director:	Ricky Grisson, M.D.	Phone Ext. 3-4298	Pager:	350-6543
Scientific Director:	Syed Latif, Ph.D.	Phone Ext. 3-4272	Pager:	350-9019
Manager:	Matthew Keane	Phone Ext. 4-3702		
Lead Technologist:	Sheryl Crowell	Phone Ext. 4-4736		
Senior Technologist:	Debra Smeal	Phone Ext. 4-5217		
Senior Technologist:	Robert Travis	Phone Ext. 4-5886		
Senior Technologist:	Cindy Mossman	Phone Ext. 4-5886		
Senior Technologist:	Mark Santangini	Phone Ext. 4-5858		
Toxicology Director:	Adina Badea Ph.D.	Phone Ext. 4-8390		
Chemistry Laboratory Location:	APC-1124 RIH	Phone Ext. 4-5886		
Toxicology Location:	APC-1143 RIH	Phone Ext. 4-5858		
Chemistry Laboratory Hours:	24 hours/day - 7 days/week			
Toxicology Laboratory Hours:	8:30 am – 11:00 pm – Monday through Thursday			
	7:00 am – 3:30 pm – Friday and Saturday			
	Closed Sundays and Holidays*			

**For service during off hours call the Chemistry Lab at Phone Ext. 4-5886*

CHEMISTRY LABORATORY – TMH

Medical Director	Ricky Grisson, M.D	Phone Ext. 3-4298	Pager: 350-6543
Scientific Director:	Syed Latif, Ph.D.	Phone Ext. 3-4272	Pager: 350-9019
Manager:	Debra Napert	Phone Ext. 3-4661	
Lead Technologist:	Robert Petrie	Phone Ext. 3-4225	
Senior Technologist:	Diane Lee	Phone Ext. 3-4225	
Senior Technologist:	Shannah Theriault	Phone Ext. 3-4225	
Senior Technologist:	Shawna Coutu	Phone 401-323-3264	
Location:	Main Bldg. 2 TMH	Phone Ext. 3-4225	
Laboratory Hours:	24 hours/day - 7 days/week		

With automated equipment, this lab is designed to complete both STAT and routine determinations 24 hours a day.

CHEMISTRY LABORATORY – NH

Medical Director:	Dariusz Stachurski, M.D.	Phone Ext. 5-1288	Pager:	350-2057
Manager:	Kraig Ruth	Phone Ext. 5-1104		
Senior Technologist:	Laura Mineese	Phone Ext. 5-1266		
Senior Technologist		Phone Ext. 5-1267		
Location:	Hazard 2	Phone Ext. 5-1266		
Laboratory Hours:	24 hours/day - 7 days/week			

CLINICAL IMMUNOLOGY - TMH

Medical Director:	Shaolei Lu, M.D.	Phone Ext. 4-7120	Pager:	350-8108
Manager:	Carole Kavanagh	Phone Ext. 3-2771	Cell:	255-2316
Lead Technologist:	Diane Pytel-Parenteau	Phone Ext. 3-7748		
Senior Technologist:	Kim Paiva	Phone Ext. 3-7981		
Location:	Main Bldg. 2 TMH	Phone Ext. 3-5496		

Laboratory Hours: Monday- Friday, 7:30 a.m. - 11:00 p.m.
Saturday, Sunday and Holidays – Laboratory Closed

All immunology testing for the Rhode Island, The Miriam and Newport Hospitals are performed at The Miriam Hospital Clinical Immunology Laboratory.

1. Cryoglobulin testing requires 10 mL of blood collected in 2 red top tubes (no gel separator). Specimen must be transported WARM, STAT to the lab. It is very important that the specimen remain at 37 degrees C until after separation of serum from red cells. Minimum turn around time is 72 hours. Do not draw on weekends or holidays.
2. Serum Viscosity testing requires 10 mL of whole blood collected in 2 red top tubes (no gel separator). Analysis cannot be performed with <3 mL of serum. Less than 3 mL will require draw of a new specimen.
3. HIV (Human Immunodeficiency Virus) testing requires 5 mL of blood collected in a gold top tube (no additives, with gel separator). This testing requires originally drawn blood tube (no poured off tubes). This test screens for HIV Type 1 and Type 2 antibodies and HIV Type 1 antigen. If results are positive, the sample will be forwarded to RI Department of Health for confirmatory testing.

COAGULATION – RIH/TMH

Director:	Joseph Sweeney, M.D.	Phone Ext. 3-4800	Pager: 350-9071
Manager:	Matthew Keane - RIH Debra Napert - TMH	Ext. 4-3702 Phone Ext. 3-4661	Cell:
Senior Technologist:	Sandra Demarinis - RIH	Phone Ext. 4-5560	
Senior Technologist:	Tracey Cheves - RIH	Phone Ext. 4-7241	
Senior Technologist	Donna Ross – Feole- TMH	Phone Ext. 3-4215	
Location:	APC-1124 RIH Main Bldg. 2 TMH	Phone Ext. 4-5560 Phone Ext. 3-4215	

Laboratory Hours and Test Availability: 24 hours/day, 7 day/week for routine/STAT parameters

1. All blue top tubes collected for coagulation tests require 2.7mL of blood. Samples consisting of less than 2.7 mL will automatically be rejected.
2. The Coagulation Laboratory will gladly provide consultation on working up prolonged PT's and PTT's. Please call us for information regarding specimen collection if you are unsure of specimen requirements (TMH ext. 3-4813; RIH ext. 4-5560).
3. The Coagulation Laboratory is currently expanding its test menu in the area of hypercoagulable states. Currently available:
 - a. Factor II, Factor VIII, Factor XI
 - b. Lupus Inhibitor consisting of:
 - 1) Dilute Russells viper venom time check and confirm, reflexing to Silica Clotting Time if DRVVT is negative
 - c. Anticardiolipin Antibodies: IgG, IgM, IgA
 - d. Activated Protein C Resistance Assay
 - e. Antithrombin III Assay
 - f. Protein C Assay
 - g. Protein S Assay consisting of:
 - 1) Protein S Free with reflex to total if the free is decreased
 - h. Homocysteine

4. Call the laboratory for availability of these assays. NOTE: Specimen for hypercoagulable workup should be collected prior to the start of anticoagulant therapy. You must order a PT and APTT separate and draw at same time as hypercoag workup (3 blue top tubes, 1 lavender top), and 1 red top tube), call the laboratory and we will process it for future use. Sending a sample does not commit you to ordering a hypercoagulable workup, but does provide an adequate specimen if the need arises.
5. Platelet aggregations are performed Monday through Friday dayshift only. They must be scheduled with the Coagulation Laboratory in advance (4-5560). The patient should be on NO medications since many drugs affect platelet function. This includes over the counter medications, especially those that contain aspirin or other non-steroidal anti-inflammatory agents. The referring physician should use discretion in deciding which medications may be safely discontinued in preparation for this study.

COAGULATION – NH

Medical Director:	Dariusz Stachurski, M.D.	Phone Ext. 5-1288	Pager:	350-2057
Manager:	Kraig Ruth	Phone Ext. 5-1104		
Location:	Hazard 2	Phone Ext. 5-1267		
Laboratory Hours:	24 hours/day - 7 days/week			

HEMATOLOGY - URINALYSIS – RIH/TMH

Medical Director:	Diana Treaba, M.D.	Phone Ext. 4-8897	Pager: 350-2389
Manager:	Debra Napert – TMH Matthew Keane - RIH	Phone Ext. 3-4661 Phone Ext. 4-3702	Cell:
Lead Technologist:	Carol Fleming – TMH	Phone Ext. 3-4215	
Lead Technologist:	Laura Slavin – RIH	Phone Ext. 4-6160	
Senior Technologist:	Holly Leblanc – RIH	Phone Ext. 4-6160	
Senior Technologist:	– TMH	Phone Ext. 3-4215	
Senior Technologist:	Donna Ross -Feole - TMH	Phone Ext. 3-4215	
Senior Technologist:	Jacqueline Johnson - TMH	Phone Ext. 3-4215	
Location:	Main Bldg. 2 TMH APC-1124 RIH	Phone Ext. 3-4215 Phone Ext. 4-5621	
Laboratory Hours:	24 hours/day - 7 days/week		

If there is a specimen when the laboratory is closed call Hematology, ext. 4-5621.

1. The two most commonly ordered Hematology tests are CBC/No Diff and CBC/Diff. The first consists of all the parameters in CBC without a Diff. The later consists of a CBC with either an automated or manual differential. Instrument flagging will determine which is performed.
2. Previous Orders:
Please check prior orders to eliminate unnecessary testing.
3. Patients receiving transfusions:
NO hematology blood work will be performed while a patient is receiving a blood transfusion. CBC's to determine the patient's status should be done two hours after the transfusion is finished.

4. Urinalysis:

Clean Voided Specimen - For chemical and microscopic examinations, there is usually no need for elaborate cleaning procedures. Preferably, a female should cleanse the external genitalia prior to voiding. The first portion of the urine is not collected. The second half is voided into a clean container and transferred into a yellow top Vacutainer tube. For most clinical purposes, a random voided specimen is adequate. For routine analysis a clean container is required. It need not be sterile. Precautions against light are not necessary. The first voided morning specimen is usually recommended since it has the most uniform volume, is concentrated and has the lower pH. Glycosuria and proteinuria are less frequently observed.

5. Special Hematology – Bone Marrows

Bone Marrow Aspirate	EDTA tube labelled with patient demographics	Deliver to Special Hematology, APC-1159, M-F, 7:00am–4:30 pm (after hours deliver to Main Hematology).
Bone Marrow Biopsy	1. Fixed in 10% neutral buffered formalin 2. Fresh wrapped in saline moistened gauze. Appropriately labelled with patient demographics.	Deliver to Special Hematology, APC-1159, M-F, 7:00am–4:30 pm (after hours deliver to Main Hematology).

Routine and STAT Hematology, Coagulation, and Urinalysis testing is done on site 7 days a week.

HEMATOLOGY - URINALYSIS – NH

Medical Director:	Dariusz Stachurski, M.D.	Phone Ext. 5-1288	Pager:	350-2057
Manager:	Kraig Ruth	Phone Ext. 5-1104		
Senior Technologist:	Andrea Collins	Phone Ext. 5-1267		
Senior Technologist		Phone Ext. 5-1267		
Location:	Hazard 2	Phone Ext. 5-1267		
Laboratory Hours:	24 hours/day - 7 days/week			

HEMATOLOGY - SPECIAL HEMATOLOGY - RIH

Medical Director:	Diana Treaba, M.D.	Phone Ext. 4-8897	Pager:350-2389
Associate Scientific Director:	Karen Ferreira	Phone Ext. 4-8342	
Manager:	Matthew Keane	Phone Ext. 4-3702	Cell: 641-1384
Lead Technologist:	Lydia Souza	Phone Ext. 4-8342	
Senior Technologist:	Donna Greenberg	Phone Ext. 4-8342	
Location:	APC-115 RIH	Phone Ext. 4-8342	
Laboratory Hours:	7:30 a.m. to 4:30 p.m. – Monday through Friday Laboratory closed – Saturday / Sunday / Holidays		

MICROBIOLOGY - BACTERIOLOGY / MYCOLOGY / PARASITOLOGY / MYCOBACTERIOLOGY / VIROLOGY - RIH

Director:	Tao Hong, Ph.D.	Phone Ext. 4-3144	Cell: 551-404-3577
Associate Director:	Sara Geffert, M.D.	Phone Ext. 4-4421	
Manager:	Valerie Whitehead, M.T. (ASCP)	Phone Ext. 4-8844	Cell: 256-0098
Lead Technologist, RIH	Tiffany Chargualaf	Phone Ext. 4-8587	
Lead Technologist, Coro	Aimee Angus	Phone Ext. 4-4501	
Senior Technologists:			
Microbiology	Sarah Bilida	Phone Ext. 4-8526	
Microbiology	Fredza Leger	Phone Ext. 4-5273	
Microbiology Computer	Carlotta Trapasi	Phone Ext. 4-3258	
Microbiology Evenings	Kayla Borges	Phone Ext. 4-5273	
Mycology / AFB	Deborah Sawyer	Phone Ext. 4-4282	
Virology	Chad Denommee	Phone Ext. 4-7043	
Location:	APC-1136 RIH Microbiology	Phone Ext. 4-5273	
Laboratory Hours:	24 hours/day - 7 days/week		

1. Specimens need to be transported to the laboratory in a timely fashion. Please refer to the test section of this manual.
2. CSF and tissue biopsy or sterile body fluid, should be sent STAT.
3. Routine sputum cultures are evaluated for appropriateness of culture by gram stain.
4. Wound cultures must be specified as to what type or source of specimen.
5. For anaerobic cultures, either tissue or fluid must be obtained. Swabs are unacceptable.
6. GI PCR Pathogen Panels and Parasite PCR are not performed on in-patients after 3 days of admission except by special request. C. Difficile testing is likely to be more appropriate for inpatients with diarrhea.
7. Stools for PCR should be submitted in Carey Blair medium for optimal sensitivity. Stools for Parasite PCR or ova and parasites must be submitted in a Total Fix Vial. For specimens that a full ova and parasite is requested the risk factor must be identified and a crypto/Giardia screen must also be done.

8. PCP testing is only performed on induced sputum or bronchial alveolar lavage (BAL). The sensitivity of induced sputum is 75-80%, and for BAL is virtually 100%.
9. Clinical gram stain smears are kept 14 days before discarding, for review if necessary.
10. Consultation for microbiology is available at TMH ext. 3-4236 or RIH ext. 4-5273.
11. For a comprehensive specimen collection guide and test menu, please visit the microbiology website located on the Lifespan intranet, Medical tab, Clinical Lab, Microbiology and Infectious Diseases Molecular Diagnostics.

MICROBIOLOGY (STAT TESTING) - TMH

Medical Director:	Tao Hong, Ph.D.	Phone Ext. 4-3144	Cell: 255-2439
Associate Director:	Sara Geffert, M.D	Phone Ext. 4-4421	
Manager:	Valerie Whitehead, M.T. (ASCP)	Phone Ext. 4-8844	Cell: 256-0098
Location:	Main Bldg. 2 TMH	Phone Ext. 3-4235	
Laboratory Hours:	24 hours/day-7 days/week		
STAT testing is performed on 3 rd shift			

MICROBIOLOGY (STAT TESTING) – NH

Director:	Dariusz Stachurski, M.D.	Phone Ext. 5-1278/4-6296 Cell: 481-7171
Manager:	Valerie Whitehead, M.T. (ASCP)	Phone Ext. 4-8844
Senior Medical Technologist:	Sarah Bilida M.T. (ASCP)	Phone Ext. 5-1215
Location:	2 nd floor Hazard Building	
Laboratory Hours:	24 hours/day - 7 days/week	
Stat testing is performed on 3 rd shift		

MOLECULAR GENOMIC PATHOLOGY - CORO 3 EAST SUITE 3201

Medical Director: (Interim)	Cynthia Jackson, Ph.D.	Phone Ext. 4-4370	Pager: 350-5696
Scientific Director:	Cynthia L. Jackson, Ph.D.	Phone Ext. 4-4370	Pager: 350-5696
Manager:	Melissa Andrade	Phone Ext. 4-2469	Cell: 332-8773
Senior Technologist:	Dolores Mackenzie	Phone Ext. 4-8288	
Location:	Coro East, 3 rd Floor	Phone Ext. 4-8288	
Laboratory Hours/Test Availability:	7:00 a.m. to 6:00 p.m. - Monday through Friday Laboratory closed - Saturdays/Sundays/Holidays		

When laboratory is closed, all specimens should be sent to the Central Collection area on APC-11.

MOLECULAR MICROBIOLOGY- CORO 3 EAST SUITE 3201

Director:	Tao Hong. Ph.D.	Phone Ext. 4-3144	Cell:555-404-3577
Manager:	Melissa Andrade	Phone Ext. 4-4269	Cell: 996-7213
Lead Technologist:	Aimee Angus	Phone Ext. 4-4501	
Location:	Coro East 3 rd Floor	Phone Ext. 4-2469	
Laboratory Hours:	7:30 a.m. to 4 p.m.- Monday through Friday Laboratory closed – Saturdays/Sundays/Holidays		

SCHOOL OF MEDICAL TECHNOLOGY - RIH

Medical Director:	Joseph Sweeney, M.D.	Phone Ext. 3-4811	Pager: 350-9071
Program Director:	Theresa Tellier-Castellone	Phone Ext. 4-5724	Pager: 350-5974
Location:	POB Basement 34 RIH	Phone Ext. 4-5724	
School Hours:	8:30 a.m. to 5:00 p.m. - Monday through Friday		

TRANSFUSION-FREE MEDICINE AND SURGERY

Medical Director:	Stephanie Lueckel, M.D.	Phone Ext. 4-6461	Pager:	350-4203
Program Manager:	Kevin Wright	Phone Ext. 4-4550	Pager:	350-3849
Location:	POB 440	Phone Ext. 4-4550		

Transfusion-free Medicine and Surgery (TFMS) is a comprehensive multidisciplinary approach to patient care that involves strategies to stimulate blood cell production and techniques to minimize blood loss, with the goal of achieving optimal treatment without blood transfusion.

Patients choose transfusion-free medicine and surgery for personal, ethical or religious reasons. All patients are given a directive to complete and sign that indicates their medical preferences. Some patients are unwilling to receive a blood transfusion under any circumstances; others wish to pursue the available treatment options while striving to avoid a transfusion if at all possible. Care and treatment is available for all adult and pediatric patients.

The Program Manager is the liaison among patients, physicians and staff and is available whenever questions or complications may arise.

PROCEDURE

Notify the TFMS office of patients who object to administration of blood or blood products:

Direct Admissions/Pre-admission Testing/Non-Surgical Admits/Same Day Admits

Contact the TFMS office during the admitting process.

The TFMS Program Manager or designee assists patients in completing the TFMS Medical Directive. If TFMS Program Manager is unavailable, the designee should be contacted.

TRANSFUSION SERVICE (BLOOD BANK)

Medical Director RIH/TMH:	Joseph Sweeney, M.D.	Phone Ext. 3-4810	Pager:	350-9071
Medical Director NH	Dariusz Stachurski, M.D.	Phone Ext. 5-1288	Pager:	350-2057
Manager:	Lisa Tingley	Phone Ext. 4-8673	Cell:	401-640-4789
Lead Technologist:	Karen King	Phone Ext. 4-8680		
Senior Technologists:	Stephanie Krohto - TMH	Phone Ext. 3-4800		
	Miranda Santangini – RIH	Phone Ext. 4-5294		
	MaryBeth Fransson – NH	Phone Ext. 5-1369		
Location:	Main Bldg. Basement TMH	Phone Ext. 3-4800	Fax:	3-4802
	Main Bldg. 3 RIH	Phone Ext. 4-5295	Fax:	6-5180
Laboratory Hours:	24 hours/day - 7 days/week			

1. Ordering:
All Transfusion Service testing and orders for transfusions should be placed through the Blood Administration Order Set in Life Chart where the majority of Transfusion Service (Blood Bank) procedures will be found.
2. Downtime:
A blood bank requisition (BB-3) should accompany specimens during downtime. This paper requisition must contain patient name, date of birth, and medical record number. The appropriate blood product needed, and test (s) should be checked off. The ordering physician's name for all transfusions must be handwritten on the requisition. If any information is missing the floor will be notified. Refer to Nursing Blood Administration Policy 142 for the help when obtaining blood during downtime.
3. Requests for Red Cells:
A crossmatching procedure requires a minimum of 60 minutes to complete and if antibodies are involved a search to locate compatible blood can require hours to days. If special blood components are not readily available, the attending physician will be notified. In circumstances requiring immediate intervention, the medical director will speak with attending physician and the decided course of action will be communicated to the blood bank staff.
4. Sample Expiration:
Most patient samples will expire at midnight of the third day after the sample draw date. Patients who are undergoing Pre-Admission Testing will have a specimen that is adequate for crossmatching for 28 days from the time of collection or 72 hours from the date of surgery (provided the patient has not been transfused or pregnant in the three months prior to sample collection).

5. Pick up Slips:
All requests to transfuse blood components require a Pick-up slip.
The pick-up slip will print automatically when a unit of blood or component is released in LifeChart. Refer to Nursing Blood Administration Policy 142 for help with pick up slip issues. Alternatively, contact the Blood Bank for further assistance.
6. Procedure for Picking Up Blood Components:
 - a. Transport or nursing will bring a “pick up slip” to the Blood Bank.
 - b. The transporter or nurse will sign where indicated on the pick-up slip.
 - c. The transporter or nurse will be asked to verbally verify the patient’s name, date of birth. MR# can also be verified when appropriate
 - d. For pneumatic tube transport(RIH): The “pick up slip” will be sent through the tube system with the return tube station and initials of the requestor. Once the blood is received on the floor, a phone call must be placed to the blood bank to perform a verbal verification of patient name, date of birth, and MR#.
 - e. For faxed pick up slips (JB): Transport will have patient identification information sent via pager which will be verbally verified at the blood bank prior to dispensing product
7. Storage of Blood Components on Patient Units:
Only Blood Bank approved and monitored refrigerators and coolers can be used to store blood products. Blood Bank regulated cooler used for the purposes of transport should be returned promptly to the Blood Bank after use but not later than 6 hours. Platelets should never be stored in a cooler or refrigerator.
8. Administration of Blood:
The transfusion of the blood component should be initiated within 30 minutes of the time of issue from the Blood Bank and completed within 4 hours. If a blood component is not transfused it must be returned to the Blood Bank immediately.
9. Report of Transfusion Reaction:
Report any suspected transfusion reaction to the Blood Bank as soon as possible and follow the directions on the back of the yellow card attached to the blood component.
10. Report of Possible Disease Transmission:
Report suspected post transfusion hepatitis, HIV, or any other suspected infectious disease to Medical Director of the Blood Bank.
11. Emergency Procedures:
The need for emergency transfusions can be initiated by ordering blood emergently through Life Chart or calling the Blood Bank. All verbal orders for emergent uncrossmatched blood will require a Physician signature. Type O red cells, plasma, and/or whole blood are available in offsite trauma refrigerators at some locations. A sample should be obtained as soon as possible so that the patient can be switched to ABO/Rh compatible blood.

12. Special Requests/Testing:

The Blood Bank should be notified in advance if a patient requires a “special product” These products need to be special ordered from the Rhode Island Blood Center and may take longer to obtain. These include:

- a. Irradiated component
- b. HLA matched platelets
- c. Therapeutic apheresis service - under "other" products.

VI. ANATOMIC PATHOLOGY

AUTOPSY PATHOLOGY – RIH/TMH/NH

Medical Director:	Weibiao Cao, M.D.	Phone Ext. 4-8578	Pager: 350-8930
Associate Director:	Katelyn Dannheim, M.D.	Phone Ext. 4-3847	Pager: 350-1929
Manager:	Rony A Lopez	Phone Ext. 4-8523	Cell: 401-474-7971
Lead Pathologists Assistant:	Robin Poudrier	Phone Ext. 4-4602	Pager: 350-2051
Diener - RIH:	Kerry Ochteau	Phone Ext. 4-4750; 4-4759	Pager: 350-5623
Pathology Aide – TMH:	Jeff Hart	Phone Ext. 3-4244	Pager: 350-2571

Locations:

Office - Pathology Office, Main Bldg. 2 TMH	Phone Ext. 3-4245
Office - Pathology Office, APC-12 RIH	Phone Ext. 4-5169
Morgue - Main Building, Basement TMH	Phone Ext. 3-4255
Morgue – Aldrich Basement - RIH	Phone Ext. 4-4750; 4-4759
Morgue – Newport Hospital – send bodies to RIH When autopsy is requested	

TMH - Morgue Access:	Pathology	Phone 3-4245
Monday-Friday, 8:30 am to 4:30 p.m.		
All other Days and Hours including Holidays	Security	Phone 3-2700
RIH - Morgue Access:	Pathology	Phone 4-4759 or 4-4750
Monday-Friday, 8:00 am to 4:30 p.m.	Security	Phone 4-5221
All other Days and Hours	Security	Phone 4-5221
NH - Morgue Access:	Registration Desk	Phone 845-1700
Monday-Friday, 8:00 am to 4:30 p.m.		
All other Days and Hours		

Hours Autopsies are Performed:

Autopsies are performed routinely between 8:00 a.m. and 3:00 p.m. on regular working days and Saturdays. Autopsies are usually not performed on Sundays or holidays unless circumstances apply (e.g. religious reasons, pediatric metabolis cases etc.) with the approval of the on-call Pathologist. Autopsies received after 3:00 p.m. are performed the next working day or Saturday. On Saturdays or after hours, autopsies are performed by the on call resident with an assigned diener (8:00 a.m. to 3:00 p.m.).

Introduction:

The autopsy is a complex procedure, which entails a delay of at least 3-4 hours for the family and undertaker. In order to be able to perform autopsies when required, the Pathology Department asks for promptness and cooperation among pathologists, physicians, nursing staff, unit managers, and administrators.

Requirements:

1. Autopsy Permission Form:

No autopsy can begin until the House Officers or attending physicians have completed an autopsy permission signed by the next of kin and properly witnessed, unless it is a medicolegal autopsy performed at the direction of the Medical Examiner. Refer to the Administrative Policy Admin-29 "Deaths Reportable to the Medical Examiner" for information regarding reportable deaths and the notification process.

The electronic autopsy consent form is available in EPIC (LifeChart) in the field "Discharged as Deceased" field/tab where relevant autopsy information is also available to the physician for review and guidance. The Autopsy Consent Form must indicate permission and limitations, and information regarding next of kin and must be signed by the physician. The permission form must be signed by the next of kin as well as the permission (see order of authority below). Written consent is the preferred method of autopsy permission, but telephone permission is acceptable to avoid delay (using the electronic consent form and with a witness on phone). Obtaining permission for autopsy is approved if a prompt examination and exchange of information among pathologist, physician, and family are assured. Once permission is granted, Health Information Services (Medical Records) must be informed (TMH X32222, RIH X45553) and Registration at NH (X51700).

****Next of Kin:***

- a. Health care agent, unless limited by agency document***
- b. Spouse or certified domestic partner***
- c. Adult Children***
- d. Parents***
- e. Adult siblings***
- f. Grandparents***
- g. Guardian at time of death***

2. Signed Death Certificate:

Signed death certificate enables the undertaker to remove the body. All deaths, including spontaneous fetal deaths, are reportable on appropriate death certificates, to be filed directly with the Department of Health (if the fetus is disposed of by the hospital). The filing of a death certificate in case of spontaneous abortion is the joint responsibility of the attending clinician and the hospital acting in lieu of the funeral director (Items 17a-18b in Physician's Handbook on Medical Certification: Death, birth, fetal death, 1978). The signed death certificate will be uploaded to LifeChart by the applicable clerks.

Note: Medical Examiner cases will have no death certificate.

3. Procedure and Hours:

During a normal working day (8 a.m. to 5 p.m.) and on Saturdays (8 a.m. to 5pm) the Pathology Resident will be notified by the Call Center that there is a pending autopsy. Pathology Resident will download the completed, electronically signed consent form and death certificate. Pathology Resident will review for appropriateness of signatures and provide the forms to the Pathology

Office secretary for accessioning. Outside of normal working hours an e-mail can be sent to the autopsy or on-call resident (available from the call center) for the autopsy to be performed on the next working day. In special circumstances (e.g. religious reasons, pediatric metabolic disorders) an autopsy will be performed on Sundays or holidays as indicated. In such circumstances the physician must contact the on call Pathologist. If a phone or beeper number is provided with the autopsy permits, the pathologist will make every effort to identify special clinical concerns beforehand and transmit preliminary findings and diagnosis after the case is completed. For additional information in complicated situations, call the Pathologist on call (Call Center) (nights, weekends, holidays included).

4. Autopsy's Performed on Patients Outside of Miriam or Rhode Island Hospital

- a. Autopsies are performed by contract at Rhode Island Hospital for:
Newport, Fatima, South County, Kent County, and Eleanor Slater Hospital. These hospitals contract with Rhode Island Hospital to perform the autopsies for a specific charge. They may have internal policies about payment, but we do not charge a patient's family for this service.
- b. Physicians with Lifespan privileges with patients who either died at home or in a nursing home may request an autopsy be performed at Rhode Island Hospital. The deceased must have been admitted to a Lifespan hospital in the past year and/or the requesting physician must be a Lifespan physician.
- c. Autopsies are performed at the request of the Medical Examiner.
- d. Autopsies (brain only or full body) are performed as a "brain donation" through the Brain Tissue Resource Center.
- e. Autopsies are performed on brains from outside institutions collected for research purposes (eg. GE).
- f. Lifespan does not perform autopsies "for hire". If someone calls and their loved one has died outside of the hospital and does not fall into any of the categories listed at the top and they are asking if we will perform an autopsy for hire – we do not handle these autopsies.

Procedure:

- a. A phone call from a physician or outside institution is made to Lab Admin (45152) at RIH or to Anatomic Pathology Office at RIH (45160) to initiate the autopsy. The caller is informed by Pathology Staff to have the funeral home bring a copy of any chart/history that is available and a completed and appropriately signed autopsy permission and death certificate. *(If the caller does not have access to an Autopsy Permission request form have them contact (RIH - Bed Control) (TMH – HIS) to have a blank format faxed to them).* Pathology staff member who received the call will then call Resident on Autopsy Service to notify them of the possibility of an autopsy.

- b. When the funeral home drops the body off at the Morgue, they must call Health Information Services at x45553 to notify them. HIS will then call Pathology Resident on autopsy call to inform them of the arrival of the body. If a body and completed paperwork arrives by 3 p.m. (Monday-Friday), the autopsy is generally performed the same day. If the body and completed paperwork arrives after 3 p.m. the autopsy is performed the following day
- c. If the Brain Tissue Resource Center or a brain donation call is received call contact Dr. John Donahue.

Additional Information:

- a. There is no charge by Lifespan to the family for autopsies (it is possible that hospitals we have contracts with may charge the family directly for this service as we are paid by them.)
- b. The family is responsible for the cost of transporting the body which generally can be arranged thru the funeral home.
- c. *Autopsy reports for these Outside Cases are distributed only to the referring institution or physician. See below.

5. Autopsy Reports:

A copy of the provisional diagnosis is sent to Health Information Service and the physicians designated below approximately two days after the autopsy. The final diagnosis is available approximately 30 days after the autopsy for routine and 60 days for complex cases and may require a longer time when special procedures are performed. The Final report will be sent to the same physicians as indicate below as well as Health Information Services. The attending physician should inform the next of kin promptly of the gross autopsy findings--the same or following day.

For Rhode Island Hospital In-Patient Autopsy

- a. Submitting physician is the Attending on the Death Certificate
If the service indicated on the postmortem authorization is "Emergency Medicine" the submitting physician is Jeffrey Feden, followed by attending on death certificate
- b. In "additional physician(s)" field include any physicians' names that are on the postmortem authorization or Death certificate.
- c. If a physician's name dropped in from EPIC move them to the additional physician spot
- d. Add the following additional copies to:
 - i. Chief Medical resident
 - ii. Louis Rice, MD
 - iii. Patients primary care physician **if listed**
 - iv. David T. Harrington, MD
 - v. Sajeev Handa, MD
 - vi. Phyllis A Dennery – if Pedi case

Outside Autopsy Performed at RIH (Kent, Fatima, South County)

Staff copy to only the Chief of Pathology at the submitting hospital:

- a. Kent Hospital - Cu Zhang, MD*
- b. Fatima Hospital - Daniel Schaffer, MD,*
- c. South County - James Carlsten, MD*

For The Miriam Hospital In-Patient Autopsy

- a. Submitting physician is the Attending on the Death Certificate
 - 1.) If the service indicated on the postmortem authorization is “Emergency Medicine” the submitting physician is Jeffrey Feden, followed by attending on death certificate
 - 2.) In “additional physician(s)” field include any physicians’ names that are on the postmortem authorization or death certificate.
 - 3.) If a physician’s name dropped in from EPIC move them to an additional physician spot (Patients primary care physician)
- b. Add the following additional copies to:
 - 1.) Chief Medical resident
 - 2.) Fred Schiffman, MD
 - 3.) G. Dean Royce, MD
 - 4.) David T. Harrington, MD
 - 5.) Sajeev Handa, MD
 - 6.) David Harrington
 - 7.) Bethany Gentilesco, MD Quality Management

CYTOLOGY – RIH

Medical Director: Latha Pisharodi, M.D. Phone Ext. 4-7826 Pager: 350-5123

Manager: Rony A Lopez Phone Ext. 4-8523 Cell: 474-7971

Senior Cytotechnologist: Susan Osial Phone Ext. 4-8530
Wesley Wagnac Phone Ext. 4-5231
On call pager Pager 350-0978

Location: APC-12205 RIH Phone Ext. 4-5231/4-5692

Laboratory Hours: 8:30 a.m. to 5:00 p.m. - Monday through Friday
Laboratory Closed - Saturdays / Sundays / Holidays

When the Cytology Laboratory/RIH is closed, fresh specimens should be delivered to the Central Accession Laboratory for refrigeration. All fresh specimens must be submitted in biohazard specimen transport bags with the requisition forms in attached document pouch. Specimen container must be labeled with patient's name, DOB and source. The laboratory stocks some supplies for specimen procurement and transport.

Laboratory Request Slips: Lifespan Gyn Specimen Form No. Y-84 or Lifespan Non-Gyn Specimen Form No. Y-83 or Epic forms for Gyn and Non-Gyn

PROCEDURE	SOURCE	PREPARATION	INSTRUCTIONS
BREAST SMEARS FOR TUMOR CELLS (SEE ALSO THIN PREP)	<u>Breast Secretion Method</u> = Smear <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hrs after receipt of specimen	Frosted end slide labeled with patient name, DOB and body site	Discard the first drop of secretion. Smear the remainder of the secretion expelled from the nipple on the frosted side of the slides. Fix immediately with aerosol cryofixative or 95% ethanol.
BRONCHIAL BRUSH FOR TUMOR CELLS (SEE ALSO THIN PREP)	<u>Bronchial Brush Method</u> = Thin Prep <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hrs after receipt of specimen	Brush tip in Hanks Solution	Send to Cytology

PROCEDURE	SOURCE	PREPARATION	INSTRUCTIONS
BRONCHIAL WASHINGS FOR TUMOR CELLS (SEE ALSO THIN PREP)	<u>Bronchial Washings</u> <u>Method</u> = Thin Prep <u>Turnaround Time</u> = 1 day; Rush=4-8 work hr after receipt of specimen	Disposable tubes or jars (or in Hanks Solution)	Label each tube or jar with specific area washed. Send specimen to lab. as soon as procedure is completed.
CELL BLOCK	Any UNFIXED BODY FLUID. Deliver fresh, in designated container*, double-bagged. Labelled.	SEND DIRECTLY TO CYTOLOGY	
CEREBROSPINAL FLUID FOR TUMOR CELLS (SEE ALSO THIN PREP)	<u>Cerebrospinal fluid</u> <u>Method</u> = Cytospin <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hr after receipt of specimen	Disposable spinal fluid tube from set	Send as much fluid as possible to the laboratory as soon as the procedure is completed.
FLUIDS FOR TUMOR CELLS (SEE ALSO THIN PREP)	<u>Fluids</u> : Pleural, Pericardial, Ascitic, Peritoneal, Cyst, Misc. Fluids. <u>Method</u> = Thin Prep <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hrs after receipt of specimen	Unfixed fluid or in Hanks Solution (cyst fluid)	Send to laboratory as soon as procedure is completed.
GI TRACT WASHES AND BRUSHES FOR TUMOR CELLS (SEE ALSO THIN PREP)	<u>Esophageal, Gastric, Duodenal, Colonic</u> <u>Method</u> = Thin Prep <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hr after receipt of specimen	Brush tip in Hanks Solution. Washes in disposable jar	
FINE NEEDLE ASPIRATION FOR TUMOR CELLS FROM ACCESSIBLE SITES (BREAST, LYMPH NODES, ETC.) (SEE ALSO THIN PREP)	<u>Any suspected tumors</u> <u>Method</u> = Thin Prep or Smear - Spread <u>Turnaround Time</u> = 1 day; Rush =4-8 work hrs after receipt of specimen	Frosted end slides labeled with patient name, DOB and body site and slide, mailer (or in Hanks Solution), aspirated sample in Hanks Solution.	On site, spread material evenly on slides and fix immediately with aerosol cytofixative or 95% Ethanol.

PROCEDURE	SOURCE	PREPARATION	INSTRUCTIONS
FNA THYROID	<i>Any suspected tumors</i> <u>Method</u> = Thin Prep or Smear - Spread <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hrs after receipt of specimen	Frosted End slides labeled with patient name, DOB, and body side and side, mailer (or in CytoLyt), aspirated sample in CytoLyt	On site, spread material evenly on slides and fix immediately with aerosol cytofixative or 95% Ethanol.
FINE NEEDLE ASPIRATION FOR TUMOR CELLS; REQUIRES IMAGING GUIDANCE (SEE ALSO THIN PREP)	<i>Lung, Liver, Kidney, Pancreas, Retroperitoneum, etc.</i> <u>Method</u> = Thin Prep <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hr after receipt of specimen	FNA material in Hank's solution Pancreas FNA in CytoLyt	Send specimen accompanied by Cytology forms. Label tube with patient name, DOB, and body site.
ORAL SMEARS FOR TUMOR CELLS (SEE ALSO THIN PREP)	<i>Scraping from mouth</i> <u>Method</u> = Smear - Spread <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hr after receipt of specimen	Frosted-end slides labeled with patient name, DOB and body site and a 2-slide mailer	Scrape area of suspicion with a tongue depressor. Smear material on frosted-end side of slides. Fix immediately with aerosol cytofixative or 95% ethanol.
SPUTUM FOR TUMOR CELLS (SEE ALSO THIN PREP)	<i>Sputum</i> <u>Method</u> = Thin Prep <u>Turnaround Time</u> = 1 day; Rush = 4-8 work hr after receipt of specimen	Disposable sputum cup	Rinse mouth. Collect single deep cough specimen in jar. If suspicious of malignancy, test should be repeated for 3 days. Send to lab as soon as possible.
URINE FOR TUMOR CELLS	<i>Urine</i> <u>Method</u> = Thin Prep <u>Turnaround Time</u> = 1 day; Rush=4-8 work hr after receipt of specimen	Unfixed specimen in disposable urine jar or tubes from catheterization set	Request single, early morning, freshly voided specimen (catheterized specimen is preferred for females). Do not submit first voided of the day.
VAGINAL - CERVICAL FOR TUMOR CELLS (PAP SMEAR)	<i>Vaginal - Cervical</i> <u>Method</u> = Thin prep <u>Turnaround Time</u> = 1 week; Rush=24 hr	PreservCyt	These specimens should be placed in PreservCyt. Pap kits are available through the Cytology Lab. If PAP result is ASCUS +, HPV will be reflexively ordered/billed separately on patients 30 or over unless no HPV testing is stated on requisition.

ELECTRON MICROSCOPY – RIH

Medical Director:	Mark Birkenbach, MD	Phone Ext. 4-8548	Pager:	350-4790
Manager:	Rony A Lopez	Phone Ext. 4-8523	Cell:	474-7971
Technologist:	Michael Pidgeon	Phone Ext. 4-4378		
Location:	APC 12211 RIH	Phone Ext. 4-4378		

Laboratory Hours: 8:30 a.m. – 5:00 p.m., Monday-Friday Laboratory closed weekends and holidays.

When the lab. is closed, specimens should be delivered to Main Lab. (Central Collection) on APC11.

1. Specimens for electron microscopy are fixed in a modified Karnovsky's EM fixative that is available from the EM Facility at RIH APC 12-211 Revco refrigerator: The RIH Surgical Suite refrigerator Bridge Building 3rd floor: The RIH Morgue and The Miriam Hospital from the pathology lab refrigerator on the second floor. EM specimens must be placed in fixative as soon as possible after excision and if necessary, carefully diced into 1-2 mm cubes while being covered with fixative. The specimen container must have the Pathology number written on it with a permanent marker (not on the lid). A Surgical Pathology Request Form containing the patient's name, address, sex, age, date of birth, hospital number, tissue source, and name of physician is attached to the specimen container and sent to the EM laboratory. Refrigerate if there is a delay in delivery to Surgical Pathology (weekend, night, etc.). Outside physicians' offices and hospitals can obtain the fixative during regular working hours, 8:30 a.m.-5:00 p.m. weekdays.
2. Reports: Reports may be obtained through the Surgical Pathology Office, TMH ext. 3-4245 or RIH ext. 4-5160.

HISTOPATHOLOGY / NEUROPATHOLOGY - RIH

Director, Histopathology:	Maria Garcia-Moliner, M.D.	Phone Ext. 4-4723	Cell: 617-834-6179
Director, Neuropathology	Ivana Delalle, M.D., PhD.	Phone Ext. 6-4420	Pager: 350-2426
Pathology Manager:	Rony A Lopez	Phone Ext. 4-8523	Cell: 474-7971
Senior Technologist, Histology	Dawn Salisbury	Phone Ext. 4-7196	
Senior Technologist, Neuropathology	Terra Velilla	Phone Ext. 4-3246	
On Call Pager:			Pager: 350-4240
Location:	APC-12224 RIH	Phone Ext. 4-5601	
Laboratory Hours:	Monday - Friday, 3:00 a.m. - 11:30 p.m.		

PROCEDURE	PREPARATION	INSTRUCTIONS
BONE BIOPSY FOR METABOLIC BONE DISEASE	Fix in neutral formalin. SEND PROMPTLY	<u>DO NOT DECALCIFY</u> . Send to Pathology Cutting Room.
BONE MARROW BIOPSY	CORE BIOPSY - in jar of formalin double-bagged. Label jar. SEND IMMEDIATELY	Specimen including an <u>ASPIRATE</u> sample - Deliver to <u>HEMATOLOGY</u> lab Main Building, 2nd Floor or Hematology Lab APC11 - RIH. Attach Surgical Pathology Requisition Form (TMH =DLM-20; RIH = Y-82), with clinical history. Results available following afternoon on specimens received before noon; 48 hr on specimens received after noon.
FROZEN SECTION	ANY FRESH (UNFIXED) TISSUE SPECIMEN	MAIN OPERATING ROOMS, OUTPATIENT OPERATING ROOMS, BLACKSTONE VALLEY SURGICAL - Deliver fresh specimens to Specimen Collection Desk in Laboratory immediately. Attach Frozen Section Request Form.
MUSCLE BIOPSY	Fresh Muscle Tissue at least 1-2 cm wrapped in saline-moistened gauze, placed in dry specimen container, on ice. <u>NO</u> fixative solution.	For cases requiring Histochemical and Enzymatic Analysis as well as EM. Specimens require special handling. Notify RIH Neuropathology Dept. 24 hrs in advance. Please call RIH Neuropathology Dept. at ext. 4-3246 or RIH Surgical Pathology Office at 4-5160. For cases being performed at The Miriam Hospital call TMH Pathology Dept. at x3-4245. Results on average reported within 7 days.

NERVE BIOPSY	Fresh Nerve Tissue at least 2 cm in length, wrapped in saline moistened gauze, placed in dry specimen container, on ice. <u>NO</u> fixative solution	For cases requiring Histochemistry, Teased Fiber Preparation, Semi-thin Resin Section and EM, specimens require special handling; notify RIH Neuropathology Dept. 24 hrs in advance. Please call RIH Neuropathology Dept. at 4-3246 or RIH Surgical Pathology Office at 4-5160. For cases being performed at The Miriam Hospital please call TMH Pathology Dept. 3-4245. on average reported within 7 days.
RENAL BIOPSY	Place specimen on saline-moistened gauze. <u>NO</u> fixative solution. <u>Double-bagged</u> . Labeled. Deliver immediately, to Surgical Pathology, Bridge Building, 3rd Floor.	Attach Surgical Pathology Consultation Form, with clinical history. Notify pathology 24-hours in advance (TMH ext. 3-4245, RIH ext. 4-5160). Notification is necessary for handling. Results: Fluorescent Microscopy & Light Microscopy evaluation within 24 hours. Electron Microscopy specimens, within 72 hours.
SKIN, MUSCLE, LYMPH NODE, AND OTHER TISSUE FOR IMMUNOFLUORESCENCE	Same as renal biopsy	Notify Pathology Office, TMH ext. 3-4245, RIH ext. 4-5160 in advance. Results: Frozen, within 24 hours.
TISSUE BIOPSY (ROUTINE)	BIOPSIES, and other small tissue specimens - in jar of formalin fixative, double-bagged. Label. LARGE TISSUE SPECIMENS. Fresh, in plastic bag (<u>double-bagged</u>). Label. Refrigerate.	Main OR - Picked up by Pathology Personnel Surgicenter, Private Offices, Blackstone Surgical - Delivered to Surgical Pathology Cutting Room by Transport Personnel. Attach Surgical Pathology Consultation Request Form, with clinical history. DO NOT enclose slip inside bag, always to outside bag. If Surgical Pathology is closed (weekends and after 4:30 p.m. on weekdays), place specimen in refrigerator in your area. Biopsies and rush specimens received by 3pm will be available in 24 hours.

IMMUNOHISTOCHEMISTRY – RIH

Medical Co-Directors:	Jesse Hart, D.O.	Phone Ext. 6-2082	Pager: 350-3233
Medical Co-Directors:	Sara Maleki, M.D.	Phone Ext. 6-4691	Pager: 350-2282
Pathology Manager:	Rony A Lopez	Phone Ext. 4-8523	Cell: 474-7971
Senior Technologist:	Jackie Fanion	Phone Ext. 4-4734	
On Call Pager:			Pager: 350-2628
Location:	APC 12134 RIH	Phone Ext. 4-4734	

Laboratory Hours: Monday - Friday, 6:00 a.m. - 4:30 p.m.

1. Requisition: All procedures listed may be requested using Surgical Pathology Requisition form (TMH =DLM-20; RIH =Y-82).
2. Reports: Reports of procedures may be obtained through the Surgical Pathology Office (TMH ext 3-4245; RIH ext. 4-5160).
6. Specimens: Send all specimens to Specimen Collection Desk in Lab. (TMH = Main-2; RIH = APC-12).
7. Procedures:
 - a. Immunofluorescence for immunoglobulins and complement on fresh biopsies of skin, kidney and muscle - Do not fix. Send fresh on gauze moistened with saline or in transport solution specific for immunofluorescence. TMH - Specimen sent to Main Lab second floor. Lab will notify immunohistochemistry. Lab will transport to RIH APC12-134 NOTIFY LAB SPECIMEN IS BEING SENT.
 - b. Immunohistochemistry: Available to elucidate the nature of pathologic process and lesions. These procedures are usually performed at request of the pathologist responsible for generating the final diagnosis. The following page list the antigens selected:
8. Methodology:

Manual and automated staining for formalin fixed, paraffin embedded specimens. Detection system: Avidin Protein Complex or Peroxidase Labelled Polymer Chromogen: Diaminobenzidine or Nova Red (Alkaline Phosphatase detection system available).

IMMUNOHISTOCHEMISTRY (IMMUNOPEROXIDASE ANTIGENS)		
ACTH (adrenocorticotrophic hormone)	CD138	Cytokeratin 5/6
Actin, muscle specific (HHF35)	CD10	Cytokeratin MAK-6 (M; KA4 and UC2/PR- 10-11; Zymed, cocktail)
Actin, smooth muscle (1A4)	CD15 (LeuM1)	D2-40
ALK Protein	CD1a	Desmin
Alpha- sarcoglycan	CD19	DOG-1
Alpha-1-antitrypsin	CD20 (L26)	Dysferlin
Alpha-fetoprotein	CD21	Dystrophin
Alpha-HCG	CD23	EBV (Epstein Barr virus latent membrane protein 1)
Alpha-synuclein	CD235a, Glycophorin A	E-cadherin
a-Methyl acyl-CoA Racemase (AMACR)	CD3	EMA (epithelial membrane antigen)
Amyloid A	CD30 (Ki-1)	ERG
Annexin A1	CD31	Estrogen receptor
Arginase	CD34	Ewing's Sarcoma
ATRX	CD35	FABP
Bcl-1 (Cyclin D1)	CD4	Factor VIII
Bcl-2	CD43	Factor XIIIa
Bcl-6	CD45RB (LCA)	Fast Myosin Heavy Chain
BER-EP4 Epithial ag.	CD5	FSH (follicle stimulating hormone)
Beta-amyloid	CD56	Fumerate hydratase
Beta-Catenin	CD57 (Leu 7)	Gamma- sarcoglycan
Beta-dystroglycan	CD68	Gastrin (P; BioGenex)
BOB1	CD7	Gata-3
Brachyury	CD79a	GCDFP-15 (gross cyst fluid protein, BRST-2)
C4d	CD8	GFAP (glial fibrillary acidic protein)
C5b-9	CDX2	Glucagon
CA125	CEA (carcinoembryonic antigen) (M)	Glutamine Synthetase
Calcitonin	CEA (carcinoembryonic antigen) (P)	Glypican-3
Caldesmon	c-erbB2	Granzyme B
Calponin	Chromogranin A	Growth hormone
Calretinin	Claudin-1	HBME-1 mesothelial
CAM5.2, KA4, UC2/PR-10- 11	CMV	HCG (human chorionic gonadotropin)
Carbonic Anhydrous	C-myc	Helicobacter pylori

IMMUNOHISTOCHEMISTRY (IMMUNOPEROXIDASE ANTIGENS) - CONTINUED		
Hepatocyte	Myeloperoxidase (MPO)	PSA (prostate specific antigen)
HER2/neu (cerb-b-2)	Myogenin	PSAP (Prostate specific acid phosphatase)
Herpes Simplex virus type I and II	Myosin (smooth muscle)	PSMA
HHV8 (human herpesvirus type 8)	Napsin A	Renal Cell Carcinoma
IDH-1	NeuN (neuronal nuclei)	S-100 Protein
IgA	Neurofilament 200kD	SALL-4
IgG	Nkx2.2	SATBZ
IgG4	Nkx3.1	SDHA
IgM	NSE	SDHB
Inhibin	OCT-2	Slow Myosin Heavy Chain
INI-1	OCT-4	SOX-10
Insulin	P16 Protein	Spirochete
Kappa light chain	P120	STAT-6
Ki-67 (MIB1)	P40	Synaptophysin
Lambda light chain	P53	Tau
LH (luteinizing hormone)	P63	TdT (terminal deoxynucleotidyl transferase)
Lysozyme	Papillomavirus	TFE-3
Mammaglobin	Parathyroid Hormone	Thyroglobulin (monoclonal or polyclonal)
Melan-A (mart-1)	PAX-5	Thyroid Transcription Factor, TTF-1
Melanoma Antigen (hmb45)	PAX-8	Toxoplasma
Merosin Laminin alpha 2 chain	PD-L1	Triple Stain (PIN-4 cocktail) (M&P;CK5, CK14, P63, P504S; XM26, LL002, BC4A4)
MITF	Phox B	TSH (thyroid stimulating hormone)
MLH-1	PLAP (placental alkaline phosphatase)	Ubiquitin
MOC-31	PMS-2	Vimentin
MSH-2	Polyoma virus	VIP(vasoactive intestinal polypeptide)
MSH-6	Prealbumin	Wilms' Tumor 1 (WT) Protein
MUC-1	Pro-collagen	EBER CISH
MUC-2	Progesterone receptor	Kappa CISH
MUC-4	Prolactin	Lambda CISH
MUM-1 Protein	Prostein	Her2 CISH

SURGICAL PATHOLOGY – RIH/TMH

Medical Director:	Maria Garcia-Moliner, M.D.	Phone Ext. 4-4723	Cell: 350-1055
Pathology Manager:	Rony A Lopez	Phone Ext. 4-8523	Cell: 474-7971
Administrative Coordinator:	Lissi Marte	Phone Ext. 6-4467	
Lead Pathologist Assistant	Robin Poudrier	Phone Ext. 4-4602, 4-5514	Pager: 350-2051
Surgical Pathology Office – TMH	Main Bldg. 2 TMH	Phone Ext. 3-4245	
Surgical Cutting Room – TMH	Main Bldg. 2 TMH	Phone Ext. 3-4243	
Surgical Pathology Office – RIH:	APC 12114 RIH	Phone Ext. 4-5169	
Surgical Cutting Room - RIH:	Bridge Building, 3 rd Floor RIH	Phone Ext. 4-5441	

Laboratory Hours: Monday-Friday, 8:00 am – 4:30 pm

1. Request Form:
Surgical Pathology Requisition Form (RIH/TMH DLM-20/Y-82).

2. Standard Procedures:
Specimens for histologic examination should be sent to the Pathology Cutting Room, as soon as possible after excision. All specimens received on the same day from the same patient should be listed on one Pathology requisition slip. Fill out Surgical Pathology Requisition Form completely, including previous impression, previous history, etc., and attach to specimen container. Specimen container(s) must be labelled with patient name and a second identifying information (DOB) as well as site and side – all information on container must match the requisition. Unlabeled specimens or mismatched requisitions and containers will not be processed until properly labeled by physician or their designee.

All specimens should be double bagged and labeled with patient's name and DOB. The requisition slip must be attached to the outside of the bag.

If Surgical Pathology is closed (weekends, and after 4:00 p.m. on weekdays), place specimens in refrigerator in Specimen Receiving or if fixed in formalin, leave on counter in Cutting Room. If special handling of the specimen is necessary after work hours, a resident is on call and can be contacted through a paging operator.

3. **Urgent Biopsies:**
Biopsy specimens on which a diagnosis cannot wait until noon the following day can be processed rapidly if they are delivered, in formalin fixative, to the Cutting Room before 10:00 am. *The decision to accept the specimen for such rapid processing will only be made in consultation with surgical pathologist on frozen sections that day.*
4. **Routine Cases:**
 - a. All small surgical biopsies received by 3 pm will be processed the same day. Routine cases are normally signed out within 4 days of receipt of sample. Results are available by calling the Surgical Pathology office, TMH ext. 3-4245; ext. RIH ext. 4-5169 or by logging onto LifeChart and accessing the patient's record. If the specimen was marked as a "rush", the diagnosis will be communicated about noon the following day.
 - b. Larger Tissue Specimens: Requiring rush diagnosis should be marked "rush", in which case the diagnosis will be communicated about 1:00-2:00 p.m. the following day.
5. **Reports:**
All questions regarding reports should be referred to the Surgical Pathology Office, TMH ext. 3-4212; RIH ext. 4-6391. Please do not call the Surgical Pathology Cutting Room.
6. **On Call Procedures:**
A pathologist is on-call at all times and may be reached through the Hospital Call Center as well as on the internet on URL "LifespanPathology.Qgenda.com" under Call Center - Landing Page.

